

# FY 2010 Median Family Income Documentation System

## Median Family Income Calculation Methodology

FY 2010 estimates take advantage of the 2008 American Community Survey (ACS) 3-year data published by the Bureau of the Census. While HUD's FY2010 median family income (MFI) estimates are still updates of 2000 Census data, the 2010 HUD update factors are similar to the methodology employed to generate FY2009 update factors; similarly, FY2010 estimates use 3 year ACS data because more areas are covered by the 3 year estimates. In general:

- FY2010 estimates are based on local area ACS 2008 surveys for places of 20,000 or more, where such surveys have been published.
- Estimates for all other areas now reflect the state-level change between the 2000 Census state and 2008 ACS state estimates.

HUD's FY 2010 MFI estimates make more extensive use of ACS data than previous years. All estimates are projected forward from 2008 to April 1, 2010, using an annual trend factor of 3.0 percent. Except for minor modifications, HUD continues to use the same area definitions used in FY2006.

Importantly, since the ACS responses were delivered between 2006 and 2008, the impact of the recession which began in 2008 on family incomes is not fully captured by these data.

York County, SC is part of the Charlotte-Gastonia-Rock Hill, NC-SC HUD Metro FMR Area. Consequently all information presented below applies to all of the Charlotte-Gastonia-Rock Hill, NC-SC HUD Metro FMR Area.

York County SC, has published local area 3 year 2008 ACS Survey results.

The step-by-step procedures used to develop FY 2010 estimates for York County are as follows:

1. The 2000 Census was used to estimate what are treated as mid-1999 local median family income estimates.
2. The 2000 Census estimates are updates from mid-1999 to end-2008 using the following formula:

$$(1 - 10 * \text{MoER}) * \frac{\text{ACS Local Median}_{2008}}{\text{Census Local Median}_{2000}} + (10 * \text{MoER}) * \frac{\text{ACS State Median}_{2008}}{\text{Census State Median}_{2000}}$$

Where MoER is the "margin of error ratio." The MoER is defined as the margin of error of the 2008 ACS local MFI estimate divided by the 2008 ACS estimate of local MFI. The weight assigned to the change in local median family income from the ACS is the larger of 1 minus 10 times the MoER or zero and the weight assigned to the change in state MFI is ten times the local MoER, or one, whichever is smaller.

NOTE: ACS estimates are based on samples drawn throughout the survey years that ask about income for the previous 12 months, thereby reflecting income over a 47 month period. All responses are then adjusted by the Bureau of the Census to "annual" values for the survey year using the average of the sum of the CPI indexes for the 12 months before the survey date over the annual CPI index for the year of the survey response. See "Income, Earnings, and Poverty from the 2005 American Community Survey", August 2005 page 2 for a discussion of inflation adjustments made by Census for the ACS. The Census Bureau further updated each response in a multi-year estimate (in this case 3-year estimates) to the final year of survey period (2008). HUD makes a further adjustment to these values by moving the "as of" date to December of the publication year, again using CPI indexes. Specifically, HUD adjusts the 2008 multi-year estimate to December 2008 using the seasonally adjusted December 2008 CPI (211.339) over the 2008 annual CPI (215.303). All 2008 ACS data are adjusted to December of 2008 in this way.

Additionally, Charlotte-Gastonia-Rock Hill, NC-SC HUD Metro FMR Area combines areas from 2.0 states. Therefore, state level information used in this calculation are population weighted average values of the states underlying this area.

3. Median family income estimates for April 1, 2010, are then estimated as follows:

$$\begin{aligned} & \text{Step 1 median family income} \\ & * \text{Step 2 adjusted local update factor} \\ & * 1.03 \text{ (3.0\% annual trending)}^{1.25 \text{ years}} \\ & = \text{FY 2010 Median Family Income estimate} \end{aligned}$$

Although HUD is continuing its use of 3-year ACS data in estimation of median family income estimates, HUD is discontinuing its use of the "hold-harmless policy" with respect to Section 8 income limits for FY 2010. For more in depth information, please review HUD's [FY2010 Briefing Materials](#), Page 1.

## The results of the Median Family Income Step by Step Process

### York County Results

1. The following are the 2000 Census Median Incomes (as of 1999) for:

Area	2000 Census Median Family Income
York County, SC	\$55,178

NOTE: Since HUD uses area definitions based on the calculation of Fair Market Rents, the 2000 Census Median shown above will not match Census publications as HUD uses special tabulations of Census data specific to HUD's area definitions.

2. The mid-1999 to end-2008 update factor is calculated as follows:

Area	ACS Local Median <sub>2008</sub>	Confidence Interval	MoER	Year End 2008 Update	Census Local Median <sub>2000</sub>	Local Factor Calculation	Weight (1/MoER)	ACS State Median <sub>2008</sub>	Census State Median <sub>2000</sub>	State Factor Calculation	Weight (10*MoER)	Result

				<b>Factor</b>								
York County, SC	65,758*	794	794 / 65,758 = 0.0121	(211.339 / 215.303) = 0.9816	55,178	(65,758 * 0.9816) / 55,178 = 64,547 / 55,178 = 1.1698	0.879	56,558	46,335	(56,558 * 0.9816) / 46,335 = 55,517 / 46,335 = 1.198	0.121	(0.879 * 1.1698) + (0.121 * 1.198) = 1.0283 + 0.145 = 1.1735

\*The 2008 ACS Local Median shown here was derived from a special tabulation generated for HUD specific to HUD's area definitions.

Due to the fact that the York County, SC is comprised of multiple areas that cross state lines, a state weighted average is used for both the 2008 ACS state median and the 2000 Census state median. The values shown in the table above are consistent for the state with the largest area within the York County, SC. The weighted averages yield a state level value of 1.2 whereas the numbers in the table yield a calculated value of 1.198.

3. The FY 2010 median family income is estimated as follows:

Area	Step 1 2000 Census Area Median Family Income	Step 2 Adjusted Local Update Factor	Trending 3.0% for 1.25 years	FY2010 Area MFI Estimate
York County, SC	55,178	1.1735	1.03 <sup>1.25</sup> = 1.03764	(55,178 * 1.1735 * 1.03764) = 67,188.63

4. In keeping with HUD policy, the MFI Estimate is rounded to the nearest \$100:

Area	Unrounded FY 2010 MFI Estimate	Rounded FY 2010 MFI Estimate
York County, SC	\$67,188.63	\$67,200

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